

ARTICLE V.

DEFORMITY OF SHOULDER FOLLOWING NERVE INJURY. By L. McLANE TIFFANY, M.D., Professor of Operative Surgery in the University of Maryland.

WHILE injury to the posterior circumflex nerve is recognized as a possible complication in dislocation at the shoulder, and as such is mentioned in the usual text-books, yet the signs of such an affection are perhaps capable of further translation. These signs are usually very plain, and demand early recognition, not only because a complete diagnosis is essential to the patient's welfare, but because an intelligent prognosis is essential to good surgery. The following, therefore, is offered as elucidating somewhat a condition of affairs rarely very obscure.

CASE I.—J. Q., aged 33 years, a strong, healthy sailor, slipped and fell on the deck of his vessel while attempting to grasp a rope. On rising, the left arm being useless, he descended to the cabin; there was then "a lump in front of the shoulder, and the bones on top stuck out" (his own words). He was laid on the floor by four shipmates, who pulled upon his arm with all their force; after a while the "lump went away." Since the fall he has been unable to perform seaman's duty, for he cannot raise the elbow from the side. Twenty-four days after injury, his condition is thus described: the affected arm hangs easily, the elbow touching the side; the hand can be placed upon the opposite shoulder; the shoulder has lost the normal contour, being somewhat flattened; there is a depression beneath the acromion, the deltoid muscle feels more soft than natural. Measurement shows the circumference of the deltoid to be half an inch less on the affected than on the well side; from the acromion to the external epicondyle is, on the affected side, three-quarters of an inch longer than on the well side. There is a fulness over the anterior aspect of the joint. By pressing the elbow upwards towards the socket, the head of the humerus returns to the normal position, the contour of the shoulder is restored, and the distance between the acromion and epicondyle equals that between the same points on the other side of the body. The interrupted current produces no contraction of the deltoid. Commencing one and a quarter inch below the acromion over the deltoid is an area of cutaneous anæsthesia seven inches long by two and three-quarters inches broad, of irregular outline, the long diameter corresponding to that of the arm, the apex situated at the humeral attachment of the deltoid. This anæsthetic territory is surrounded by a zone one-third of an inch broad, of intense hyperæsthesia, which gradually fades into normal sensibility.

Immediately after the accident J. Q. suffered from loss of power, together with pain in the thumb, index, and middle fingers of the left hand; this, however, passed off in a week, leaving no ill effects. At present the fingers are in all respects normal.

While passive motion of the joint can be made to nearly the normal extent unaided, motion is greatly limited; thus directly forwards, the elbow being straight, the arm can be elevated only to an angle of 45° with the vertical, showing implication of anterior deltoid fibres. On attempting to carry the hand to the mouth, the elbow is sharply flexed, and

the forearm then slid along the front of the chest, the head is strongly inclined, and sometimes the finger tips touch the mouth, sometimes not. Elevation of the arm directly outwards from the side is impossible, implication of middle deltoid fibres; so also elevation of arm outwards and backwards is impossible, implication of posterior deltoid fibres. The loss of motion in these two last directions largely restricts the usefulness of the hand; thus he is unable to touch his back above the buttocks, the side above the ilium, and places the hand in his pocket with difficulty and very slowly, the member being in strong pronation. When attempts are made to use the arm, the trapezius and great pectoral muscles are brought into strong action, so as to move the entire shoulder, and thus compensate for the deltoid insufficiency. Rotation of the humerus outwards, supination, is weaker than in the opposite arm, implication of *teres minor*(?).

The above history points to a lesion of the posterior circumflex nerve, which, taking its origin from the posterior cord of the brachial plexus, winds around the surgical neck of the humerus to be distributed to the deltoid muscle and skin over it, the *teres minor*, and shoulder-joint. The impaired use of deltoid, cutaneous anæsthesia and diminished supination from supposed *teres* paralysis all conform strictly to the anatomical relations of the nerve in question, and were confirmation required, it would be found in the temporary pain and loss of power experienced by the patient in the thumb, index and middle fingers, parts supplied by the radial nerve, the proper continuation of the posterior cord.

A certain roughness of the joint was present when J. Q. was first seen, but it would be useless to speculate as to whether such a condition were due to nerve injury or the direct violence of luxation.

Taking the patient's description of the accident, it is fair to suppose that he sustained a dislocation of the left humerus, subcoracoid, and inasmuch as the head of the bone was promptly replaced by strong traction, the question at once presents itself, was the nerve lesion produced by dislocation, or by the violence exerted in effecting reduction? While it is not to be denied that strong and prolonged traction might injure the circumflex nerve, yet it does not seem likely that forcible reduction of a luxation would cause greater injury than the violence which caused the displacement; nor is it necessary that the nerve lesion should be preceded by a luxation, for simply stretching or jarring a nerve may seriously impair its action,—just as stretching a nerve may so modify its nutrition as to cure a persistent neuralgia.

Of such an injury to the posterior circumflex without dislocation of humerus the following is an example:—

CASE II.—A. B., white, a strong, healthy man, while driving a carriage was thrown from his seat, striking the ground on his left shoulder. He was seen shortly afterwards by a physician, who pronounced his injury a bruise, recommending rest for a few days, and subsequently a stimulating liniment. When seen by me, three months later, drooping of the shoulder, inability to raise the arm outwards from the side, flabbiness of the deltoid, and fulness over the anterior aspect of the joint were all present. Questioning

elicited no history of cutaneous anæsthesia, nor was it present at the time of my examination.

In this case there was present deltoid paralysis, yet no dislocation at the shoulder had occurred, nor had the patient been subjected to violent manipulation of the affected limb in attempted reduction. It is fair to presume that the posterior circumflex nerve was injured by the shock of the contusion, or else that the humeral head was thrust partly from the socket so as to injure the nerve, returning to the glenoid cavity when violence ceased, a not very likely hypothesis. This patient was seen but once, so the progress of the case is unknown.

J. Q., however, remains under observation, receives in the way of treatment the constant current, and is slowly regaining the use of the arm, while the cutaneous sensibility is increasing. It is a noteworthy fact that improvement did not commence until more than two months after the accident, which would suggest a guarded prognosis in cases of similar nature. The prognosis in regard to complete recovery is a question of vital importance, as also the probable duration of impaired nerve function. In a certain number of cases the paralysis is permanent. In *Cooper's Surg. Dict.*, vol. i. p. 527, Desault is credited with two cases of complete paralysis, one permanent, the other disappearing in fifteen days; Boyer with three cases of deltoid paralysis, one being permanent; Nelaton with one which disappeared in ten days. Inasmuch as there does not appear to be any very certain method of distinguishing between a nerve strained, or completely torn across, at once, it is not possible to express an opinion in respect to entire recovery when the patient is first seen.

The appearance presented by a shoulder affected in the manner stated is very suggestive of partial dislocation, were such a condition of affairs possible, and might give rise to the idea, if seen some time after the receipt of the injury, that a dislocation had occurred, and had not been reduced. The fulness which is apparent at the anterior aspect of the joint I ascribe to the lax condition of the deltoid, which permits the head of the humerus to slip downwards until the convexity rests upon the prominent lower rim of the glenoid cavity; the recumbent position, or pressing the elbow upwards, both cause the fulness to disappear. I would suggest as a possible hypothesis that the teres paralysis permits the head of the humerus to fall forwards towards the anterior edge of the socket.

At present, four months after the receipt of the injury, cutaneous sensibility is restored, hyperæsthesia is present only at the posterior edge of the deltoid above the axilla. Paralysis of the anterior deltoid fibres has greatly improved, of the middle fibres less, of the posterior fibres least; depression below acromion still marked; patient can pass left hand over his whole scalp, can touch back above buttocks, and continues to improve slowly. The anterior prominence over joint remains, as also a corresponding depression beneath the acromion behind; some slight roughness of the socket is present; pressing the elbow upwards, and the anterior projection

backwards restores the normal contour of the parts; this, however, is much more difficult than formerly, and may ultimately result in permanent so-called partial dislocation.

Practically, the early recognition of the trouble in question is of prime importance, since the prognosis of a dislocation will vary greatly according as nerve injury be or be not present. It is, and for some time has been, my custom, within a week after the receipt of an injury to the shoulder to remove all bandages, and cause the patient to execute such motions as necessitate the use of different portions of the deltoid muscle, the better to corroborate my diagnosis; for a patient will receive, shortly after an accident, an unfavourable opinion with a certain amount of equanimity, while the same opinion delivered two months later for the first time, will subject the surgeon to much possible criticism as to "why he did not find out sooner what was the matter?" All the more advisable is it in view of Case 2 to examine for paralysis when there has been no dislocation.

ARTICLE VI.

ON ABDOMINAL DRAINAGE OF ADHERENT PORTIONS OF OVARIAN CYSTS AS A SUBSTITUTE FOR COMPLETED OVARIOTOMY. By LEWIS A. STIMSON, M.D., Surgeon to the Presbyterian Hospital, New York.

A FEW weeks ago it was my fortune to witness an operation undertaken for the removal of an ovarian cyst by one of our most experienced and skilful gynæcologists, to be present at the death of the patient four hours afterwards, and to share in the grief caused by the loss of one whose life had been spent in unselfish devotion to others and whose watchfulness kept want and care from many sick and feeble.

Death, in all its forms, is only too familiar to the physician, but when it follows with brutal haste upon an attempt to relieve, undertaken confidently after mature deliberation, guided by full knowledge and experience, and executed with precision and skill, it forces upon us a crushing sense of responsibility and renews the conviction that our art may sometimes be more potent for harm than for good. If a rule of conduct is to be drawn anew from that sense and that conviction, it is not that we must refuse to interfere, but that we must learn from our reverses, enlarge our knowledge, and improve our methods. The maxim that our first duty is to do no harm—*primum non nocere*—is not intended to reduce us to the rank of simple spectators; it is to stimulate us to attain greater accuracy in diagnosis, greater skill in treatment, and quicker perception of indications. In the hope of furthering those objects I have ventured to follow out some lines of thought suggested by this case, which presented some of the most serious complications of ovariectomy.